

UNITED STATES NAVAL OBSERVATORY
CIRCULAR NO. 33

U. S. Naval Observatory, Washington 25, D. C.

November 15, 1951

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS

JUNE - JULY, 1951

By Lucy T. Day

These results are based upon measurements made at the Naval Observatory on plates secured either there or at the Mt. Wilson Observatory. The symbols used for the entries in the successive columns are as follows:

U.T., the epoch of observation in Universal Time.

No., the identifying number of the group assigned by Mt. Wilson.

Δl , the heliographic difference in longitude from the central meridian, measured positive to the west.

φ , the heliographic latitude, measured positive to the north.

ρ , the heliocentric angular distance from the line joining the centers of the Earth and Sun.

A , the true area of the umbra plus penumbra, expressed in millionths of the visible hemisphere.

s , the number of spots.

An asterisk means that no Mt. Wilson number was assigned. Plates secured at the Naval Observatory are indicated by N, and those at Mt. Wilson by W. The plate quality, which follows, is indicated by:

1, Poor; 2, Fair; 3, Good; 4, Very Good; 5, Excellent.

The following five quantities are listed successively at the end of each day, and give for that day:

1. The total number of groups, g .
2. The longitude of the central meridian, L_0 .
3. The latitude of the center of the disc, B_0 .
4. The total value of A .
5. The total value of s .

The mean daily area and the mean relative sunspot number, $r=10g+s$ are given at the end of the month.

These results are a continuation of those published in the *Monthly Weather Review* from February 1, 1927 to December 31, 1947.

JUNE

U.T.	No.	Δl	φ	ρ	A	s
		$^{\circ}$	$^{\circ}$	$^{\circ}$		
1.648	10684	-64	-2	64	48	4
N-4	10684	-57	-2	57	12	1
	10679	+19	+14	24	388	1
	10678	+63	-22	64	485	1
	(3)	(227)	(-1)		933	7
2.660	10684	-48	-2	48	16	1
N-2	10679	+32	+15	35	16	2
	10679	+33	+13	36	388	1
	10678	+76	-22	76	533	1
	(3)	(213)	(-1)		953	5
3.726	10679	+46	+14	48	388	1
	(1)	(199)	(0)		388	1
4.647	10687	-85	+9	85	97	1
N-3	10686	-45	-11	46	24	1
	10686	-43	-8	44	48	1
	10679	+59	+14	60	388	1
	(3)	(187)	(0)		557	4
5.582	10690	-85	+14	85	970	4
W 3	10689	-83	+18	83	97	6
	10689	-78	+19	78	48	2
	10687	-77	+9	77	388	2
	10686	-33	-12	35	73	12
	10686	-29	-11	31	48	5
	10688	-27	-8	28	12	1
	10688	-24	-7	25	24	10
	10679	+71	+14	71	388	4
	(6)	(174)	(0)		2048	46
6.652	10690	-78	+17	79	291	2
N-3	10690	-68	+16	70	582	1
	10690	-67	+15	68	121	1
	10690	-66	+14	67	48	1
	10687	-68	+12	69	170	5
	10687	-65	+10	66	121	7
	10687	-58	+12	60	194	4
	10687	-58	+10	59	194	1
	10689	-67	+19	68	242	7
	10689	-61	+18	62	97	2
	10686	-17	-11	21	121	15
	10688	-12	-7	13	145	6
	10688	-9	-6	12	36	5
	10688	-6	-6	7	242	4
	10679	+85	+14	85	242	2
	(6)	(160)	(0)		2846	63
7.667	10691	-79	+10	79	194	2
N-3	10690	-67	+16	68	218	7
	10690	-57	+15	58	582	1
	10690	-55	+14	57	194	1
	10687	-58	+10	59	48	1
	10687	-54	+11	55	97	3
	10687	-52	+9	53	533	5
	10687	-48	+11	49	194	3
	10687	-48	+10	49	194	2
	10689	-53	+19	56	194	5

U.T.	No.	Δl	φ	ρ	A	s
		$^{\circ}$	$^{\circ}$	$^{\circ}$		
	10689	-49	+18	51	48	3
	10686	-9	-7	12	12	1
	10686	-6	-10	12	97	10
	10686	-1	-10	10	145	6
	10688	+1	-7	7	194	7
	10688	+5	-7	9	121	14
	10688	+10	-7	12	291	1
	(6)	(147)	(0)		3356	72
8.831	10691	-69	+12	69	218	2
N-3	10691	-67	+10	68	24	1
	10691	-63	+10	64	436	1
	10690	-50	+17	52	145	5
	10690	-40	+16	43	533	1
	10690	-38	+15	41	145	1
	10689	-38	+19	42	121	6
	10687	-37	+11	38	582	20
	10687	-30	+10	32	315	2
	10686	+10	-11	15	36	2
	10688	+17	-8	19	218	10
	10688	+25	-8	26	388	2
	(6)	(131)	(0)		3161	53
9.849	10691	-57	+12	58	291	1
N-3	10691	-57	+11	58	73	2
	10691	-53	+10	54	48	3
	10691	-49	+10	50	436	1
	10690	-37	+17	40	339	10
	10690	-31	+14	34	12	1
	10690	-28	+16	33	558	1
	10690	-26	+15	31	194	2
	10689	-23	+18	29	48	1
	10689	-19	+16	25	24	3
	10687	-22	+10	24	727	23
	10687	-16	+9	18	194	2
	10687	-16	+10	19	145	1
	10686	+26	-13	30	24	2
	10688	+29	-9	31	145	10
	10688	+39	-8	40	436	1
	(6)	(118)	(0)		3694	64
10.563	10691	-48	+12	50	291	3
W 3	10691	-43	+8	44	12	4
	10691	-38	+9	40	388	1
	10690	-27	+17	32	291	9
	10690	-21	+15	26	24	4
	10690	-19	+16	25	533	1
	10690	-17	+14	22	194	1
	10689	-13	+17	21	73	3
	10689	-10	+16	18	48	7
	10687	-12	+9	15	485	1
	10687	-10	+12	15	194	20
	10687	-7	+10	12	97	1
	10687	-6	+9	11	133	1
	10686	+35	-12	36	12	4
	10688	+41	-8	42	194	12
	10688	+50	-7	50	339	1
	(6)	(109)	(0)		3308	73
11.658	10691	-33	+12	35	194	1
N-3	10691	-31	+11	32	12	3

JUNE

U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s	
		$^{\circ}$	$^{\circ}$	$^{\circ}$					$^{\circ}$	$^{\circ}$	$^{\circ}$			
	10691	-23	+ 8	24	291	1		10687	+41	+ 7	41	206	4	
	10690	-11	+17	21	170	9		10687	+49	+ 9	49	170	7	
	10690	-11	+13	16	36	5		(6)	(54)	(+1)		3872	60	
	10690	- 3	+16	15	485	1		15.654	10696	-46	-12	48	73	17
	10690	- 2	+14	13	121	1		N-4	10693	-45	+18	47	6	1
	10689	- 2	+17	16	61	4			10693	-44	+17	45	61	1
	10687	+ 3	+ 9	8	533	17			10692	-38	-13	40	2133	1
	10687	+ 9	+ 9	12	242	5			10692	-31	-13	33	12	8
	10688	+52	- 7	53	97	1			10691	+21	+10	22	24	15
	10688	+63	- 6	63	436	1			10691	+28	+ 8	29	97	23
	(5)	(94)	(+1)		2678	49			10691	+30	+ 7	31	97	1
12.659	10693	-82	+16	82	97	1			10691	+32	+ 6	33	145	1
N-3	10692	-78	-12	78	1697	4			10690	+41	+13	42	73	8
	10691	-20	+12	22	194	2			10690	+48	+11	49	12	6
	10691	-18	+11	21	24	1			10690	+49	+12	50	485	1
	10691	-10	+ 8	13	388	3			10690	+51	+11	52	109	1
	10690	+ 1	+15	14	36	1			10687	+53	+ 7	53	194	1
	10690	+ 2	+14	13	170	4			10687	+61	+ 8	61	24	5
	10690	+11	+14	16	485	1			10687	+63	+ 7	63	61	8
	10690	+12	+12	16	145	2			(6)	(41)	(+1)		3606	98
	10689	+13	+16	18	36	6		16.650	10697	-81	+17	81	194	1
	10687	+15	+10	17	61	10		N-3	10693	-36	+17	38	24	7
	10687	+15	+ 7	16	242	3			10693	-30	+17	33	48	1
	10687	+21	+ 9	22	170	6			10696	-35	-10	37	109	5
	10688	+68	- 7	68	12	3			10696	-29	-10	31	145	2
	10688	+78	- 7	78	436	1			10692	-27	-13	31	679	6
	(7)	(81)	(+1)		4193	48			10692	-24	-12	27	582	5
13.561	10693	-78	+16	78	12	1			10692	-21	-11	24	727	4
W 4	10693	-72	+16	72	145	1			10691	+43	+ 8	43	36	6
	10692	-64	-13	65	2085	1			10691	+44	+ 6	44	194	4
	10691	- 8	+12	13	194	4			10690	+55	+13	57	48	5
	10691	- 5	+11	11	24	7			10690	+63	+12	63	582	6
	10691	- 1	+ 9	8	16	5			10687	+67	+ 6	69	242	1
	10691	+ 3	+ 8	8	388	10			(7)	(28)	(+1)		3610	53
	10690	+13	+15	19	145	10		17.783	10697	-70	+17	70	48	3
	10690	+19	+15	22	24	15		N-2	10697	-66	+17	66	291	1
	10690	+22	+14	25	533	1			10696	-21	-11	24	218	1
	10690	+24	+12	26	145	1			10696	-19	-12	22	194	10
	10690	+27	+14	30	97	30			10693	-20	+17	26	24	1
	10687	+28	+ 9	29	61	20			10693	-16	+16	21	48	1
	10687	+29	+ 7	30	194	4			10692	-14	-12	19	48	1
	10687	+35	+ 8	36	218	4			10692	- 9	-13	17	2521	4
	10695	+48	+ 4	48	24	5			10691	+55	+ 5	55	12	1
	10694	+75	- 5	75	48	4			10691	+60	+ 5	60	242	1
	(7)	(69)	(+1)		4353	123			10690	+72	+13	72	97	1
14.656	10693	-62	+17	60	12	1			10690	+77	+12	77	582	1
N-3	10693	-59	+18	59	73	2			(6)	(13)	(+1)		4325	26
	10696	-58	-11	59	12	1		18.831	10699	-78	-20	79	388	1
	10692	-50	-12	52	2085	1		N-2	10697	-56	+17	57	48	1
	10692	-45	-12	47	6	2			10697	-51	+16	53	24	1
	10691	+ 8	+11	13	121	10			10697	-49	+16	51	267	1
	10691	+13	+ 9	14	145	14			10696	- 8	-12	16	97	1
	10691	+16	+ 7	17	109	2			10696	- 2	-11	12	97	10
	10691	+18	+ 7	19	194	1			10696	+ 2	-11	12	48	1
	10690	+29	+13	31	97	5			10693	- 5	+16	17	145	6
	10690	+33	+10	34	24	6			10693	- 2	+15	14	36	1
	10690	+37	+12	38	485	1			10692	+ 5	-13	15	1988	3
	10690	+38	+13	40	24	2								
	10690	+39	+11	40	109	1								

JUNE

U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s
	10692	+10	-13	17	121	2							
	10691	+74	+4	74	388	1	23.663	10700	-48	+12	49	194	1
	(6) (359)	(+1)			3647	29	N-3	10699	-12	-22	27	242	2
19.715	10699	-64	-20	67	315	1		10697	+15	+16	21	194	1
N-3	10697	-43	+17	45	36	1		10697	+17	+17	24	48	3
	10697	-38	+16	41	291	1		10696	+57	-16	60	48	1
	10696	+3	-12	13	194	2		10696	+60	-12	62	291	16
	10696	+5	-11	13	109	2		10696	+68	-12	69	388	5
	10696	+5	-13	15	48	1		10692	+67	-17	68	388	1
	10696	+9	-11	15	145	10		10692	+64	-18	65	48	1
	10696	+15	-13	21	97	3		10692	+71	-14	73	1454	1
	10693	+7	+16	22	170	12		(5) (295)	(+2)			3295	32
	10693	+11	+15	17	24	2	24.793	10700	-35	+12	36	194	1
	10692	+12	-17	22	582	1	N-2	10699	+2	-22	24	194	2
	10692	+17	-15	23	1357	5		10697	+28	+19	33	97	5
	10692	+21	-14	25	145	2		10697	+29	+16	32	194	1
	(5) (347)	(+1)			3513	43		10696	+74	-10	75	388	2
20.649	10699	-60	-24	63	12	1		10692	+85	-15	85	582	2
N-2	10699	-51	-20	56	291	1		(5) (280)	(+2)			1649	13
	10697	-31	+17	34	48	2	25.653	10700	-22	+12	24	194	1
	10697	-27	+16	31	6	1	N-3	10699	+15	-22	28	194	2
	10697	-25	+17	29	242	1		10697	+40	+14	42	73	4
	10696	+17	-13	23	109	4		10697	+41	+12	43	218	1
	10696	+20	-10	23	145	5		(3) (269)	(+2)			679	8
	10696	+21	-11	25	339	15	26.712	10702	-71	+11	71	97	4
	10693	+19	+15	24	48	2	N-3	10700	-9	+12	13	145	1
	10693	+20	+17	25	61	7		10699	+19	-21	30	24	2
	10693	+23	+15	26	12	1		10699	+27	-23	35	121	2
	10692	+27	-17	33	630	1		10697	+51	+14	53	6	1
	10692	+32	-14	35	1309	6		10697	+55	+12	56	194	2
	10692	+35	-14	37	97	1		(4) (255)	(+2)			587	12
	(5) (335)	(+2)			3349	48	27.649	10703	-80	-4	80	16	1
21.648	10700	-76	+12	76	194	1	N-3	10702	-58	+11	59	36	1
N-3	10699	-39	-21	44	242	1		10700	+4	+11	9	145	1
	10697	-19	+17	24	24	6		10699	+39	-23	43	97	6
	10697	-12	+17	19	194	1		10697	+69	+12	69	97	2
	10696	+31	-13	34	194	6		(5) (242)	(+2)			391	11
	10696	+32	-11	33	121	1	28.651	10703	-66	-5	67	24	2
	10696	+37	-11	40	533	1	N-3	10702	-45	+11	46	24	1
	10693	+32	+15	34	12	1		10700	+18	+11	20	145	1
	10693	+33	+17	36	36	2		10699	+52	-23	58	48	2
	10692	+40	-17	43	582	1		(4) (229)	(+3)			241	6
	10692	+46	-14	48	1261	6	29.758	10702	-32	+11	34	24	1
	10692	+48	-13	50	97	1	N-2	10700	+31	+11	33	194	1
	10692	+51	-12	53	73	4		(2) (214)	(+3)			218	2
	(6) (322)	(+2)			3563	32	30.651	10703	-40	-6	42	12	2
22.668	10700	-62	+12	63	194	1	N-2	10702	-18	+11	20	12	1
N-3	10699	-26	-21	33	291	4		10700	+44	+10	44	121	2
	10697	+1	+16	14	242	1		(3) (203)	(+3)			145	5
	10696	+42	-15	44	97	8							
	10696	+49	-12	51	970	18							
	10693	+47	+17	50	48	1							
	10692	+53	-17	56	485	1							
	10692	+59	-14	61	1212	10							
	10692	+66	-12	67	61	1							
	(6) (309)	(+2)			3600	45							

Mean for 30 days, $A=2425$, $r=87.4$

JULY

U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s
1.608	10703	-27	-6	29	12	1	8.676	10716	-85	-11	85	194	1
W 2	10700	+55	+13	56	24	5	N-2	10715	-85	-9	85	339	2
	10700	+56	+10	56	97	1		10715	-75	-8	75	630	1
	(2)	(190)	(+3)		133	7		10712	-64	+11	64	97	2
2.563	10705	-72	+8	72	36	1		10712	-62	+12	62	48	7
W 2	10703	-13	-7	16	12	1		10712	-60	+12	60	97	1
	10704	+70	-8	70	24	1		10712	-58	+10	58	145	1
	10704	+71	-10	72	12	1		10713	-50	-8	52	97	6
	10700	+70	+10	70	97	1		10713	-49	-10	51	48	2
	(4)	(177)	(+3)		181	5		10708	-21	+5	21	73	1
3.654	10706	-75	+16	75	145	1		10706	-6	+12	10	97	1
N-2	10706	-75	+12	75	16	1		10717	+21	+8	22	24	1
	10705	-58	+9	58	24	7		10710	+71	+9	71	48	1
	10703	+3	-8	12	12	2		10710	+76	+8	76	97	1
	10700	+84	+9	84	97	1		(8)	(96)	(+4)		2034	28
	(4)	(163)	(+3)		294	12	9.653	10716	-77	-7	77	97	2
4.742	10708	-74	+5	74	145	1	N-3	10716	-75	-10	75	679	6
N-2	10706	-61	+16	62	73	3		10715	-67	-8	68	194	7
	10706	-59	+13	60	145	1		10715	-62	-6	63	48	2
	10706	-59	+17	61	6	1		10715	-60	-8	62	679	1
	10705	-44	+8	44	24	5		10712	-52	+12	53	48	7
	(3)	(148)	(+3)		393	11		10712	-50	+10	50	12	8
5.653	10708	-61	+5	61	145	1		10712	-46	+10	46	97	5
N-3	10706	-50	+13	51	97	1		10713	-35	-9	37	61	10
	10706	-50	+15	52	36	6		10708	-9	+5	9	61	1
	10706	-48	+13	49	12	2		10706	+7	+12	10	85	1
	10706	-47	+13	48	109	1		10718	+15	+20	22	36	7
	10705	-30	+8	30	24	6		(7)	(83)	(+4)		2097	57
	(3)	(136)	(+3)		423	17	10.652	10716	-62	-10	63	291	6
6.653	10712	-88	+9	88	97	2	N-2	10716	-61	-7	62	97	2
N-3	10713	-79	-9	79	388	8		10716	-59	-9	60	533	5
	10708	-52	+5	52	12	3		10715	-52	-8	54	97	2
	10708	-48	+5	48	121	1		10715	-49	-6	50	12	1
	10706	-36	+13	37	121	20		10715	-47	-8	48	679	1
	10706	-35	+12	36	97	1		10712	-38	+12	38	48	5
	10711	-12	-13	20	6	4		10712	-33	+12	34	48	2
	10710	+45	+10	45	12	1		10712	-32	+10	33	121	3
	10710	+47	+9	47	36	2		10713	-22	-10	27	48	6
	10709	+66	+6	66	24	6		10708	+4	+6	4	24	6
	(7)	(123)	(+3)		914	48		10708	+6	+5	6	48	1
7.785	10715	-88	-7	88	388	2		10706	+21	+12	23	73	1
N-3	10712	-76	+11	76	194	1		10717	+38	+8	39	24	2
	10712	-70	+9	70	218	6		(7)	(70)	(+4)		2143	43
	10713	-64	-9	65	97	9	11.716	10716	-49	-10	51	291	21
	10708	-34	+5	34	85	1	N-3	10716	-49	-12	52	24	6
	10706	-21	+11	22	61	20		10716	-45	-11	47	436	16
	10706	-19	+9	20	97	1		10715	-39	-9	42	73	1
	10714	+1	+9	5	12	7		10715	-37	-11	41	61	12
	10710	+59	+9	59	24	3		10715	-32	-8	34	679	1
	10710	+62	+8	62	97	6		10712	-24	+11	25	48	12
	10709	+81	+6	81	24	1		10712	-19	+9	20	97	2
	(8)	(108)	(+4)		1297	57		10708	+19	+4	19	36	1
								10706	+34	+11	36	48	1
								(5)	(56)	(+4)		1793	73
							12.652	10716	-38	-9	41	291	6
							N-3	10716	-38	-12	42	36	11
								10716	-32	-10	34	315	7

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U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s
		$^{\circ}$	$^{\circ}$	$^{\circ}$					$^{\circ}$	$^{\circ}$	$^{\circ}$		
	10716	-30	-12	33	36	13		10715	+49	-10	51	582	2
	10715	-24	-8	26	61	16		10715	+49	-15	52	12	1
	10715	-23	-12	27	61	4		(4) (337) (+5)			1188	25	
	10715	-19	-8	22	630	1							
	10712	-5	+9	7	48	1	18.715	10722	-67	-5	68	194	1
	10712	-5	+10	8	48	6	N-3	10716	+48	-11	51	36	5
	10706	+45	+11	46	6	3		10716	+50	-12	53	291	2
	10706	+48	+11	49	36	1		10715	+60	-15	62	12	1
	(4) (44) (+4)				1568	69		10715	+61	-12	63	24	2
								10715	+63	-10	64	679	1
13.652	10716	-24	-10	27	339	18		(3) (324) (+5)			1236	12	
N-3	10716	-19	-11	24	291	8							
	10716	-17	-13	23	24	9	19.651	10723	-64	+10	64	12	1
	10715	-10	-11	18	36	7	N-3	10722	-55	-5	57	194	1
	10715	-8	-7	12	61	4		10722	-54	-5	56	24	4
	10715	-6	-8	13	630	1		10716	+61	-13	63	12	1
	10712	+8	+9	10	36	1		10716	+63	-12	65	145	1
	10720	+31	+8	32	12	5		10715	+76	-10	77	630	1
	10706	+61	+11	61	24	1		(4) (311) (+5)			1017	9	
	(5) (31) (+4)				1453	54							
14.606	10721	-17	-16	26	48	16	20.653	10723	-51	+11	52	12	2
W 3	10716	-11	-10	18	170	12	N-3	10722	-41	-5	43	206	1
	10716	-4	-12	16	388	15		10722	-40	-4	42	24	3
	10716	-2	-14	18	48	10		10716	+79	-12	79	194	1
	10715	+4	-11	16	36	12		(3) (298) (+5)			436	7	
	10715	+9	-10	17	533	1							
	10712	+22	+8	23	24	2	21.653	10723	-38	+11	38	12	1
	10720	+45	+9	45	12	3	N-2	10722	-28	-5	31	218	1
	10706	+74	+12	74	48	1		10722	-27	-6	30	24	3
	(6) (18) (+4)				1307	72		(2) (285) (+5)			254	5	
15.878	10721	-5	-17	22	48	10							
W 3	10716	+3	-10	14	109	10	22.669	10726	-74	-6	74	194	1
	10716	+5	-7	12	48	6	N-2	10726	-70	-7	71	145	1
	10716	+8	-10	16	48	10		10722	-14	-5	17	194	1
	10716	+9	-10	17	218	1		10724	0	-19	24	36	1
	10716	+11	-11	19	145	32		10724	+4	-18	23	24	5
	10715	+17	-9	21	48	25		(3) (271) (+5)			593	9	
	10715	+21	-8	25	630	1							
	10712	+35	+8	35	12	3	23.594	10726	-64	-5	65	12	2
	10720	+59	+12	60	12	3	W 4	10726	-62	-6	63	73	9
	10720	+63	+11	63	6	1		10726	-57	-7	58	61	3
	(5) (4) (+4)				1324	102		10725	-49	-6	51	48	18
16.657	10721	+10	-17	23	24	2		10729	-23	+1	24	48	19
N-3	10716	+19	-9	22	97	7		10729	-19	+1	20	48	1
	10716	+21	-11	26	24	2		10728	-8	+11	11	6	1
	10716	+23	-10	27	218	1		10722	-1	-5	10	170	1
	10716	+24	-13	29	73	6		10724	+14	-17	25	24	6
	10715	+31	-9	33	582	1		10724	+17	-18	28	16	9
	(3) (351) (+4)				1018	19		10727	+39	-7	41	12	1
17.696	10722	-80	-5	80	194	1		(7) (259) (+5)			518	70	
N-3	10721	+22	-17	31	12	2							
	10716	+27	-8	31	12	1	24.716	10726	-48	-6	50	73	8
	10716	+33	-11	37	61	12	N-3	10726	-44	-7	45	61	1
	10716	+37	-12	41	291	4		10725	-29	-6	31	12	1
	10716	+40	-15	43	12	1		10729	-9	+1	10	97	10
	10715	+45	-12	48	12	1		10729	-5	+1	5	73	1
								10728	+6	+10	8	24	1
								10722	+12	-5	15	145	1

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U. T.	No.	Δl	φ	ρ	A	s	U. T.	No.	Δl	φ	ρ	A	s	
	10724	+25	-19	34	12	2		10726	+12	-6	16	36	7	
	(6) (244)	(+5)			497	25		10726	+13	-7	17	48	1	
25.654	10726	-34	-6	36	97	18		10726	+14	-7	18	48	1	
N-4	10726	-30	-7	32	73	1		10725	+29	-5	31	24	1	
	10725	-17	-6	21	12	1		10730	+49	-18	52	61	3	
	10725	-16	-6	20	12	5		10730	+51	-18	57	121	3	
	10725	-15	-5	19	24	8		10730	+53	-18	58	24	2	
	10729	+3	+1	3	36	8		10729	+52	-1	53	24	1	
	10729	+5	0	6	16	10		10722	+66	-6	67	24	1	
	10729	+8	-2	10	12	6		(7) (191)	(+5)			438	23	
	10729	+9	-1	11	61	1		29.728	10726	+26	-7	29	24	2
	10722	+26	-5	27	97	2		N-3	10726	+27	-7	30	36	1
	(4) (232)	(+5)			440	60			10725	+37	-5	39	6	1
26.657	10726	-21	-5	23	24	10			10725	+41	-5	43	6	1
N-4	10726	-17	-5	20	61	9			10730	+62	-18	67	242	5
	10726	-15	-5	19	61	1			10730	+68	-18	71	206	4
	10725	-4	-6	12	6	7			10729	+65	-2	66	6	1
	10725	0	-5	10	12	4		(4) (178)	(+6)			526	15	
	10729	+15	+1	15	24	5		30.668	10735	-39	+10	39	6	1
	10729	+23	-1	24	36	3		N-3	10735	-37	+11	37	12	1
	10722	+38	-5	40	61	2			10733	-28	+11	28	6	1
	(4) (218)	(+5)			285	41			10734	-28	-9	32	6	1
27.651	10726	-4	-6	11	61	5			10732	+12	-6	17	12	2
N-3	10726	-2	-6	11	61	1			10726	+39	-7	42	12	1
	10725	+14	-5	17	24	1			10726	+40	-7	43	24	1
	10729	+29	+1	29	6	1			10730	+75	-18	78	242	1
	10729	+36	-1	37	24	2			10730	+88	-18	88	145	1
	10730	+34	-17	40	6	4		(6) (165)	(+6)			465	10	
	10730	+36	-17	42	12	5		31.652	10735	-23	+11	24	36	5
	10730	+38	-18	43	6	1		N-3	10734	-17	-9	22	24	1
	10722	+51	-5	52	54	5			10734	-15	-11	23	48	9
	(5) (205)	(+5)			254	25			10732	+26	-5	28	97	1
28.760	10732	-12	-5	15	16	2			10732	+28	-6	32	97	9
N-3	10731	-1	-5	10	12	1			10726	+54	-9	57	24	2
								(4) (152)	(+6)			326	27	

Mean for 31 days, $A=866$, $r=80.9$